

State of Colorado  
Energy & Carbon Management Commission

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Report taken by:  
Steven Arauza

Site Investigation and Remediation Workplan (Supplemental Form)

This form shall be submitted to the Director for approval prior to the initiation of site investigation and remediation activities. However, this shall not preclude the Operator from taking immediate action to protect public health or safety, the environment, wildlife, or livestock.

This Form 27 describes site conditions as currently understood by the Operator; approval of this Form 27 by ECMC is based on the site conditions accurately described herein; any changes in site conditions identified during or subsequent to the performance of the approved workplan may necessitate additional investigation or remediation which shall be described on a supplemental Form 27. This Form 27 is intended to provide basic information regarding the proposed site investigation and remediation actions, but the workplan may be more fully described in attached documentation.

Closure request is not available for an Initial Site Investigation and Remediation Workplan.

OPERATOR INFORMATION

Name of Operator: CAERUS PICEANCE LLC	Operator No: 10456	<b>Phone Numbers</b>
Address: 1001 17TH STREET #1600		Phone: (970) 285-2925
City: DENVER State: CO Zip: 80202		Mobile: (970) 640-6919
Contact Person: Blair Rollins	Email: brollins@caerusoilandgas.com	

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 29668 Initial Form 27 Document #: 403415823

PURPOSE INFORMATION

- Rule 913.c.(1): Pit or Cuttings Trench closure.
- Rule 913.c.(2): Buried or partially buried vessel closure, which will be by removal.
- Rule 913.c.(3): Remediation of Spill and Releases pursuant to Rule 912.
- Rule 913.c.(4): Land treatment of Oily Waste pursuant to Rule 905.e.
- Rule 913.c.(5): Closure of Centralized E&P Waste Management Facilities pursuant to Rule 907.h.
- Rule 913.c.(6): Remediation of impacted Groundwater pursuant to Rule 915.e.(3).D, and the contaminant concentrations in Table 915-1.
- Rule 913.c.(7): Investigation and remediation of natural gas in soil or Groundwater.
- Rule 913.c.(8): When requested by the Director due to any potential risk to soil, Groundwater, or surface water.
- Rule 913.c.(9): Decommissioning of Oil and Gas Facilities.
- Rule 913.g: Changes of Operator.
- Rule 915.b: Request to leave elevated inorganics in situ.
- Other: \_\_\_\_\_

SITE INFORMATION

Yes Multiple Facilities

Facility Type: WELL	Facility ID: _____	API #: 103-10955	County Name: RIO BLANCO
Facility Name: FEDERAL 1S-95-20-23 CP	Latitude: 39.951965	Longitude: -108.079929	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: NESW	Sec: 20	Twp: 1S	Range: 95W Meridian: 6 Sensitive Area? Yes

Facility Type: LOCATION	Facility ID: 316602	API #: _____	County Name: RIO BLANCO
Facility Name: FEDERAL-61S95W 20NESW	Latitude: 39.951965	Longitude: -108.079929	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: NESW	Sec: 20	Twp: 1S	Range: 95W Meridian: 6 Sensitive Area? Yes

**SITE CONDITIONS**

General soil type - USCS Classifications OH

Most Sensitive Adjacent Land Use Rangeland

Is domestic water well within 1/4 mile? No

Is surface water within 1/4 mile? No

Is groundwater less than 20 feet below ground surface? No

**Other Potential Receptors within 1/4 mile**

# SITE INVESTIGATION PLAN

## TYPE OF WASTE:

- |  |  |  |
|--|--|--|
| <input checked="" type="checkbox"/> <b>E&amp;P Waste</b> | <input type="checkbox"/> <b>Other E&amp;P Waste</b>        | <input checked="" type="checkbox"/> <b>Non-E&amp;P Waste</b>           |
| <input checked="" type="checkbox"/> Produced Water       | <input type="checkbox"/> Workover Fluids                   | No impacts associated with this project have been identified.<br>_____ |
| <input type="checkbox"/> Oil                             | <input type="checkbox"/> Tank Bottoms                      |  |
| <input type="checkbox"/> Condensate                      | <input type="checkbox"/> Pigging Waste                     |  |
| <input type="checkbox"/> Drilling Fluids                 | <input type="checkbox"/> Rig Wash                          |  |
| <input type="checkbox"/> Drill Cuttings                  | <input type="checkbox"/> Spent Filters                     |  |
|  | <input type="checkbox"/> Pit Bottoms                       |  |
|  | <input type="checkbox"/> Other (as described by EPA) _____ |  |

## DESCRIPTION OF IMPACT

Impacted?	Impacted Media	Extent of Impact	How Determined
Yes	SOILS	To be Determined	Field investigation and soil sampling

## INITIAL ACTION SUMMARY

Description of initial action or emergency response measures take to abate, investigate, and/or remediate impacts associated with E&P Waste.

Between June 22nd and July 5th, 2023, eighteen facility closure samples were collected from eighteen hydrovac potholes adjacent to locations most likely to be impacted on the pad, which include the wellhead, separator flowline tie-in, separator, separator dumphline tie-in, pipeline risers, tank-side dumphline tie-ins, line heater, line heater tie-in, and meter house tie-ins. Sample analytical results indicated concentrations of either arsenic, pH, and hexavalent chromium are above the Table 915-1 RSSLs and site specific background levels in eight areas. Between October 2nd and November 16th, 2023, excavations were completed beneath the former tank containment and tanks, pumphouse, wellhead, off-location pipeline tie-ins, separator tie-ins, meter house tie-ins, and the line heater tie-in. A total of 16 facility closure samples were collected from the excavations and/or associated stockpiles, and areas that were previously sampled were field screened for potential impacts.

## PROPOSED SAMPLING PLAN

### Proposed Soil Sampling

Will soil samples be collected as part of this investigation? ( Number, type (grab/composite), analyses, and locations of samples ):

Additional background samples will be collected from nearby off-site and undisturbed locations to address the arsenic and pH exceedances mentioned above. See Figures 3a and 3b in the attached Site Investigation Report for proposed sample locations to address the TPH exceedances adjacent to the wellhead and former buried tank. Samples adjacent to the wellhead will be analyzed for TPH and pH, and samples adjacent to the former buried tank will be analyzed for TPH only.

### Proposed Groundwater Sampling

Will groundwater samples be collected as part of this investigation? ( Number, analyses, and locations of samples ):

### Proposed Surface Water Sampling

Will surface water samples be collected as part of this investigation? ( Number, analyses, and locations of samples ):

### Additional Investigative Actions

Additional alternative investigative actions described in attached Site Investigation Plan ( summary ):

# SITE INVESTIGATION REPORT

## SAMPLE SUMMARY

Soil

NA / ND

Number of soil samples collected 34

-- Highest concentration of TPH (mg/kg) 2301.  
12

Number of soil samples exceeding 915-1 17

-- Highest concentration of SAR 3.63

Was the areal and vertical extent of soil contamination delineated? No

BTEX > 915-1 No

Approximate areal extent (square feet) 0

Vertical Extent > 915-1 (in feet) 0

**Groundwater**

Number of groundwater samples collected 0

Highest concentration of Benzene (µg/l) \_\_\_\_\_

Was extent of groundwater contaminated delineated? No

Highest concentration of Toluene (µg/l) \_\_\_\_\_

Depth to groundwater (below ground surface, in feet) \_\_\_\_\_

Highest concentration of Ethylbenzene (µg/l) \_\_\_\_\_

Number of groundwater monitoring wells installed \_\_\_\_\_

Highest concentration of Xylene (µg/l) \_\_\_\_\_

Number of groundwater samples exceeding 915-1 \_\_\_\_\_

Highest concentration of Methane (mg/l) \_\_\_\_\_

**Surface Water**

0 Number of surface water samples collected

         Number of surface water samples exceeding 915-1

If surface water is impacted, other agency notification may be required.

**OTHER INVESTIGATION INFORMATION**

Were impacts to adjacent property or offsite impacts identified?

\_\_\_\_\_

Were background samples collected as part of this site investigation?

Eight background samples were collected from eight offsite and undisturbed locations north, east, south, and west of the facility.

Was investigation derived waste (IDW) generated as part of this investigation?

Volume of solid waste (cubic yards) \_\_\_\_\_

Volume of liquid waste (barrels) \_\_\_\_\_

Is further site investigation required?

See the Site Investigation Plan section for details on future sampling.

**REMEDIAL ACTION PLAN**

Does this Supplemental Form 27A include changes to a previously approved Remedial Action Plan? No

**SOURCE REMOVAL SUMMARY**

Describe how source is to be removed.

The sources for the TPH exceedances were the wellhead and partially buried tank, both of which have been removed.

**REMEDIATION SUMMARY**

Describe how remediation of existing impacts to soil and groundwater is to be accomplished (i.e. summarize remedial action plan). Provide a brief narrative description including: technical justification, schedule for implementation, estimated time to attain NFA status, plus plans and specifications for the selected remedial action technology.

Delineation of impacts associated with the wellhead and partially buried tank are still being delineated. Once delineation is complete, a remediation plan will be included in a future Form 27. The stockpile associated with the wellhead excavation will be removed from the site and hauled to Greenleaf Environmental Services in Debeque, Colorado.

**Soil Remediation Summary**

In Situ

Ex Situ

\_\_\_\_\_ Bioremediation ( or enhanced bioremediation )

\_\_\_\_\_ Excavate and offsite disposal

\_\_\_\_\_ Chemical oxidation

\_\_\_\_\_ If Yes: Estimated Volume (Cubic Yards) \_\_\_\_\_

\_\_\_\_\_ Air sparge / Soil vapor extraction

\_\_\_\_\_ Name of Licensed Disposal Facility or COGCC Facility ID # \_\_\_\_\_

\_\_\_\_\_ Natural Attenuation

\_\_\_\_\_ Excavate and onsite remediation

Other \_\_\_\_\_

Land Treatment

Bioremediation (or enhanced bioremediation)

Chemical oxidation

Other \_\_\_\_\_

### **Groundwater Remediation Summary**

Bioremediation ( or enhanced bioremediation )

Chemical oxidation

Air sparge / Soil vapor extraction

Natural Attenuation

Other \_\_\_\_\_

### **GROUNDWATER MONITORING**

If groundwater has been impacted, describe proposed monitoring plan, including # of wells or sample points, monitoring schedule, analytical methods, points of compliance. Attach a groundwater monitoring location diagram.

# REMEDIATION PROGRESS UPDATE

## PERIODIC REPORTING

### Approved Reporting Schedule:

Quarterly  Semi-Annually  Annually  Other

### Request Alternative Reporting Schedule:

Semi-Annually  Annually  Other

Rule 913.e:

After initial approval of a Form 27, the Operator will provide quarterly update reports in a Supplemental Form 27 to document progress of site investigation and remediation, unless an alternative reporting schedule has been requested by the Operator and approved by the Director. The Director may request a more frequent reporting schedule based on site-specific conditions.

**Report Type:**  Groundwater Monitoring  Land Treatment Progress Report  O&M Report

Other Oil and Gas Facility Decommissioning Notification per  
ECMC Rule 911.a.(4) and 913.c.(9)

## Adequacy of Operator's General Liability Insurance and Financial Assurance

Describe the adequacy of the Operator's general liability insurance and Financial Assurance to fully address the anticipated costs of Remediation, including the estimated remaining cost for this project (below).

If this information has been provided on a Form 27 within the last 12 months, provide the Document Number of that form.

Per Rule 705.b, and in line with guidance laid out in the SBAP, Caerus has general liability insurance in the amount of \$1M, and Caerus has umbrella insurance, which sits over the general liability insurance in the amount of \$75M. The umbrella and general liability insurance covers property damage, bodily injury to third parties, and sudden or accidental pollution under a combined \$76M.

Operator anticipates the remaining cost for this project to be: \$ 20000

## WASTE DISPOSAL INFORMATION

Was E&P waste generated as part of this remediation? Yes

Describe beneficial use, if any, of E&P Waste derived from this remediation project:

None

Volume of E&P Waste (solid) in cubic yards 0

E&P waste (solid) description \_\_\_\_\_

ECMC Disposal Facility ID #, if applicable: \_\_\_\_\_

Non-ECMC Disposal Facility: \_\_\_\_\_

Volume of E&P Waste (liquid) in barrels 15

E&P waste (liquid) description potentially impacted soil mixed with hydrovac rinsate

ECMC Disposal Facility ID #, if applicable: \_\_\_\_\_

Non-ECMC Disposal Facility: Greenleaf Environmental Services

# REMEDIATION COMPLETION REPORT

## REMEDIATION COMPLETION SUMMARY

Is this a Final Closure Request for this Remediation Project? No

If YES:

Compliant with Rule 913.h.(1).

Compliant with Rule 913.h.(2).

Compliant with Rule 913.h.(3).

Do all soils meet Table 915-1 standards? \_\_\_\_\_

Does the previous reply indicate consideration of background concentrations? \_\_\_\_\_

Does Groundwater meet Table 915-1 standards? \_\_\_\_\_

Is additional groundwater monitoring to be conducted? \_\_\_\_\_

Operator shall comply with the ECMC 1000-Series Reclamation Requirements for all impacted and disturbed areas.

## RECLAMATION PLAN

### RECLAMATION PLANNING

Describe reclamation plan. Discuss existing and new grade recontouring; method and testing of compaction alleviation; and reseeding program, including location of new seed, seed mix and noxious weed prevention. Attach diagram or drawing.

Plans for reclamation will be presented in a future Form 27.

Is the described reclamation complete? \_\_\_\_\_

Does the reclamation described herein constitute interim or final reclamation of the Oil and Gas Location?

Interim

Final

Did the Surface Owner provide the seed mix? \_\_\_\_\_

If YES, does the seed mix comply with local soil conservation district recommendations? \_\_\_\_\_

Did the local soil conservation district provide the seed mix? \_\_\_\_\_

### SITE RECLAMATION DATES

Proposed date of commencement of Reclamation. \_\_\_\_\_

Proposed date of completion of Reclamation. \_\_\_\_\_

## IMPLEMENTATION SCHEDULE

Per Rule 913.d.(2): Any change from the approved implementation schedule will be requested at least 14 days in advance, and the Operator may not make the change without the Director's approval.

### PRIOR DATES

Date of Surface Owner notification/consultation, if required. \_\_\_\_\_

Actual Spill or Release date, or date of discovery. \_\_\_\_\_

### SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 07/01/2023

Proposed site investigation commencement. 07/01/2023

Proposed completion of site investigation. \_\_\_\_\_

### REMEDIAL ACTION DATES

Proposed start date of Remediation. \_\_\_\_\_

Proposed date of completion of Remediation. \_\_\_\_\_

Per Rule 913.d.(2): Any change from the approved implementation schedule will be requested at least 14 days in advance, and the Operator may not make the change without the Director's approval.

Change from approved implementation schedule per Rule 913.d.(2).

Basis for change in implementation schedule:

\_\_\_\_\_

## OPERATOR COMMENT

Caerus requests to utilize CECMC Table 915-1 Footnote 9 to address the chromium (VI) exceedances compared to Table 915-1. Caerus requests to adjust the concentration level for chromium (VI) from 0.3 mg/kg to 1.00 mg/kg (Pace Labs PQL for the project).

Caerus requests approval to compare all site assessment sample results to ECMC Table 915-1 RSSLs. Based on field assessment and desktop review of the area, it is believed there is no reasonable pathway for groundwater within the investigation area. The Federal-61S95W 20NESW Pad resides on a promontory ridge at an elevation of 7,290 feet. The nearest registered domestic water well is located approximately 8,500 feet southwest, and approximately 600 feet lower in elevation of the FEDERAL 1S-95-20-23 CP pad and has a constructed depth of 34 feet. This well does not have a listed yield depth. Other water wells in the area have a constructed depth of 250 feet. Based on field assessment and desktop review, Caerus requests to utilize CECMC Table 915-1 Residential Soil Screening Level results for this project.

Based on sample results outlined in the attached report of work completed, Caerus requests using CECMC Table 915-1 Footnote 1 to utilize a reduced analyte suite to include TPH (GRO, DRO, ORO) and pH.

I hereby certify all statements made in this form are to the best of my knowledge true, correct, and complete.

Signed: Blair Rollins

Title: EHS Specialist

Submit Date: 03/28/2024

Email: brollins@caerusoilandgas.com

Based on the information provided herein, this Application for Site Investigation and Remediation Workplan complies with ECMC Rules and applicable orders and is hereby approved.

ECMC Approved: Steven Arauza

Date: 04/03/2024

Remediation Project Number: 29668

## COA Type

## Description

COA Type	Description
0 COA	

## Attachment Check List

Upon approval, the approved Form 27 and all listed attachments will be indexed to the Remediation Project file. Only the approved Form 27 will also be indexed to the related Facilities.

### Att Doc Num

### Name

403657248	INVESTIGATION/REMEDIATION WORKPLAN (SUPPLEMENTAL)
403665205	SITE INVESTIGATION REPORT
403741025	FORM 27-SUPPLEMENTAL-SUBMITTED

Total Attach: 3 Files

## General Comments

### User Group

### Comment

### Comment Date

Environmental	Comply with outstanding COAs.	04/03/2024
Environmental	Based on the assessment of depth to groundwater provided under Operator Comment, the Operator's request to use the Table 915-1 Residential Soil Screening Level Concentrations is conditionally approved.	04/03/2024
Environmental	Based on the information provided, the Operator's proposed plan to analyze samples adjacent to the wellhead for TPH (GRO/DRO/ORO) and pH while analyzing samples adjacent to the buried tank for TPH (GRO/DRO/ORO)-only is conditionally approved.  Additional site investigation may be required depending on results of additional background assessment of native arsenic and pH concentrations as described in the Proposed Sampling Plan.	04/03/2024

Total: 3 comment(s)